



U.S. Department
of Transportation

1200 New Jersey Avenue SE
Washington, DC 20590

**Pipeline and Hazardous
Materials Safety
Administration**

OCT 29 2015

Ms. Elizabeth Carson
Department of Transportation Program Lead
Fleet Services Business Department
P.O. Box 5800
MS0950
Albuquerque, New Mexico 87185-0950

Reference No. 15-0157

Dear Ms. Carson:

This is in response to your July 14, 2015 letter requesting clarification of the Hazardous Materials Regulations (HMR; 49 CFR Parts 171-180) applicable to the shipment of an emptied non-specification pressure cylinder used to store hydrogen gas at your facility. In your letter, you state that you have a hydrogen storage system that incorporates mounted non-Department of Transportation (DOT) specification cylinders. The system is filled with 12,690 pounds per square inch (psi) of Hydrogen while at a fixed location. Your intent is to vent and purge the cylinders with nitrogen gas before transporting the cylinders by highway. You add that this process will leave a 97% Nitrogen / 3% Hydrogen gas composition at less than 29 psi inside the cylinders. You ask if the non-DOT specification cylinders that are cleaned and purged as you describe would constitute an empty package under § 173.29(b)(2)(iv)(B).

Provided that the empty packaging described in your letter is cleaned and purged in accordance with § 173.29(b)(2)(iv)(B), the answer is yes. In addition, § 173.29(b)(2)(iii) states that an empty packaging that is refilled with a material which is non-hazardous to such an extent that any residue remaining in the packaging no longer poses a hazard is not subject to the requirements of the HMR. Please note that for purposes of the HMR, cleaned and purged means no residual hazardous material or vapor remain in a container. The procedure presented in your letter appears to leave the cylinders sufficiently cleaned of residue and purged of vapors to remove any potential hazard. Your cylinders would not be considered to contain hazardous material provided any residue remaining in the cylinders no longer meets any of the hazard class definitions in the HMR.

I hope this satisfies your request.

Sincerely,

T. Glenn Foster
Chief, Regulatory Review and Reinvention Branch
Standards and Rulemaking Division

DOT/RSPA/OHMS
UNIT



Sandia National Laboratories

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Sandia Corporation

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Name: **Elizabeth Carson**
Title: DOT Program Administrator

15 JUL 15 PM 3:30

July 14, 2015

Associate Administrator for Hazardous Materials Safety
Attention: Special Permits PHH-30
Pipeline and Hazardous Materials Safety Administration
U.S. Department of Transportation
1200 New Jersey Avenue, SE
Washington, DC 20590-0001

Andrews
§ 173.29(b)(2)(iv)(B)
Packaging General
15-0157

To whom it may concern:

My name is Elizabeth Carson. I work for a private motor carrier, Sandia National Laboratories' as the DOT Program Administrator, under USDOT 545058 with hazmat certification (HM Company ID 066448) through 6/30/2017, as a shipper and transporter. We have locations in New Mexico, California and Nevada. Our California site has entered into a project with the California Air Resource Board with regards to hydrogen testing for vehicles. We are in the process of commissioning the fabrication of a system which consists of a tandem axle enclosed cargo trailer (GVWR 7,000 pounds).

The unit will contain a gaseous hydrogen storage system that incorporates permanently mounted non-DOT specification cylinders. While in use, but at a fixed location, the storage system may be filled with up to 12,690 psig of hydrogen gas. Our intent is to vent and purge the cylinders using nitrogen gas before transporting the trailer on U.S. roadways. The pressure in the cylinders will be reduced to less than 29 psig at 20° C in a series of steps. The gas composition after the final step will be 97% nitrogen / 3% hydrogen, which by our determination meets the criteria for classification as a Division 2.2 non-flammable gas. Any markings and labels on the cylinders will not be visible during transport. The cylinders are permanently mounted and will not be unloaded at any location where the trailer is used. Hazardous shipping papers will not be used when the trailer is transported.

This letter is to request interpretation of 49CFR part 173.29(b) (2) (iv)(B). Namely, can non-DOT specification cylinders containing the Division 2.2 non-flammable gas described above be transported as empty packaging? Would the above procedure satisfy the regulations stated in 49 CFR part 173.29(b)(2) to sufficiently clean the hydrogen cylinders of all residue and purge them of vapors to remove any potential hazard, thereby making the cylinders acceptable for "empty packaging" in commerce?

In order to maintain full compliance with all federal hazardous material regulations, we are requesting a written interpretation specific to the aforementioned product and purpose. I look forward to your reply.

I greatly appreciate your time and consideration.



Sandia National Laboratories

Operated for the United States Department of Energy by

LOCKHEED MARTIN 



Supply Chain Management
Logistics

Sincerely,

A handwritten signature in cursive script that reads "Elizabeth Carson".

Elizabeth Carson, DOT Program Lead
Fleet Services Business Department
P.O. Box 5800, MS0950
Albuquerque, New Mexico 87185-0950

Copy to:
Terry Johnson
Jack Euske
Mike Starr